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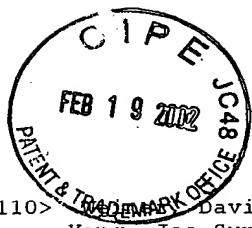
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SEQUENCE LISTING

<110> David B.
Yang, Joo-Sung

<120> Compositions and Methods of Using Capsid Protein From Flaviviruses and Pestiviruses

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<140> 09/971,980

<141> 2001-10-04

<150> 60/237,885

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 tcaccagcgt ttctgggtga gcaaaaacag gaaggcaaaa tgccgcaaaa aagggaataa 5700
 gggcgacacg gaaatgttga atactcatac tcttcctttt tcaatattat tgaagcattt 5760
 atcaggggta ttgtctcatg agcggataca tatttgaatg tatttagaaa aataaaciaa 5820
 taggggttcc gcgcacattt ccccgaaaag tgccacctga cgtc 5864

<210> 5
 <211> 123
 <212> PRT
 <213> West Nile virus

<400> 5

Met Ser Lys Lys Pro Gly Gly Pro Gly Lys Ser Arg Ala Val Asn Met
 1 5 10 15

Leu Lys Arg Gly Met Pro Arg Val Leu Ser Leu Ile Gly Leu Lys Arg
 20 25 30

Ala Met Leu Ser Leu Ile Asp Gly Lys Gly Pro Ile Arg Phe Val Leu
 35 40 45

Ala Leu Leu Ala Phe Phe Arg Phe Thr Ala Ile Ala Pro Thr Arg Ala

50

55

60

Val Leu Asp Arg Trp Arg Gly Val Asn Lys Gln Thr Ala Met Lys His
65 70 75 80

Leu Leu Ser Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala Ile Asn
85 90 95

Arg Arg Ser Ser Lys Gln Lys Lys Arg Gly Gly Lys Thr Gly Ile Ala
100 105 110

Val Met Ile Gly Leu Ile Ala Ser Val Gly Ala
115 120

<210> 6
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 6

Ser Lys Lys Pro Gly Gly Pro Gly Lys Ser Arg Ala Val Asn Met Leu
1 5 10 15

Lys Arg Gly Met Pro Arg
20

<210> 7
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 7

Lys Arg Ala Met Leu Ser Leu Ile Asp Gly Lys Gly Pro Ile Arg Phe
1 5 10 15

Val Leu Ala

<210> 8
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 8

Thr Leu Thr Ser Ala Ile Asn Arg Arg Ser Ser Lys Gln Lys Lys Arg
1 5 10 15

Gly Gly Lys Thr Gly Ile
20

<210> 9
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 9

Met Ser Lys Lys Pro Gly Gly Pro Gly Lys Ser Arg Ala Val Asn Met
1 5 10 15

Leu Lys Arg Gly Met Pro Arg Val Leu Ser Leu Thr Gly Leu Lys Arg
20 25 30

Ala Met Leu Ser Leu Ile Asp Gly Arg Gly Pro Thr Arg Phe Val Leu
35 40 45

Ala Leu Leu Ala Phe Phe Arg Phe Thr Ala Ile Ala Pro Thr Arg Ala
50 55 60

Val Leu Asp Arg Trp Arg Ser Val Asn Lys Gln Thr Ala Met Lys His
65 70 75 80

Leu Leu Ser Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala Ile Asn
85 90 95

Arg Arg Ser Ser Lys Gln Lys Lys Arg Gly Gly Lys Thr Gly Ile Ala
100 105 110

Phe Met Ile Gly Leu Ile Ala Gly Val Gly Ala
115 120

<210> 10
<211> 113
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 10

Met Thr Lys Lys Pro Gly Gly Pro Gly Lys Asn Arg Ala Ile Asn Met
1 5 10 15

Leu Lys Arg Gly Leu Pro Arg Val Phe Pro Leu Val Gly Val Lys Arg
20 25 30

Val Val Met Ser Leu Leu Asp Gly Arg Gly Pro Val Arg Phe Val Leu
35 40 45

Ala Leu Ile Thr Phe Phe Lys Phe Thr Ala Leu Ala Pro Thr Lys Ala
50 55 60

Leu Leu Gly Arg Trp Lys Ala Val Glu Lys Ser Val Ala Met Lys His
65 70 75 80

Leu Thr Ser Phe Lys Arg Glu Leu Gly Thr Leu Ile Asp Ala Val Asn

85

90

95

Lys Arg Gly Arg Lys Gln Asn Lys Arg Gly Gly Asn Glu Gly Ser Ile
 100 105 110

Met

<210> 11
 <211> 114
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 11

Met Ser Lys Lys Pro Gly Gly Pro Gly Lys Ser Arg Ala Val Asn Met
 1 5 10 15

Leu Lys Arg Gly Met Pro Arg Val Leu Ser Leu Ile Gly Leu Lys Arg
 20 25 30

Ala Met Leu Ser Leu Ile Asp Gly Lys Gly Pro Ile Arg Phe Val Leu
 35 40 45

Ala Leu Leu Ala Phe Phe Arg Phe Thr Ala Ile Ala Pro Thr Arg Ala
 50 55 60

Val Leu Asp Arg Trp Arg Gly Val Asn Lys Gln Thr Ala Met Lys His
 65 70 75 80

Leu Leu Ser Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala Ile Asn
 85 90 95

Arg Arg Ser Ser Lys Gln Lys Lys Arg Gly Gly Lys Thr Gly Ile Ala
 100 105 110

Val Met

<210> 12
 <211> 90
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 12

Arg Asn Thr Pro Phe Asn Met Leu Lys Arg Glu Arg Asn Arg Val Ser
 1 5 10 15

Thr Val Gln Gln Leu Thr Arg Phe Ser Leu Gly Met Leu Gln Lys Gly
 20 25 30

Arg Gly Pro Leu Lys Leu Phe Met Ala Leu Val Ala Phe Leu Arg Phe
 35 40 45

Leu Thr Ile Pro Pro Thr Ala Gly Ile Leu Lys Arg Trp Gly Thr Ile
 50 55 60

Lys Lys Ser Lys Ala Ile Asn Val Leu Arg Gly Phe Arg Lys Glu Ile
 65 70 75 80

Gly Arg Met Leu Asn Ile Leu Asn Arg Arg
 85 90

<210> 13
 <211> 89
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 13

Lys Ser Arg Ala Val Asn Met Leu Lys Arg Gly Met Pro Arg Val Leu
 1 5 10 15

Ser Leu Ile Gly Leu Lys Arg Ala Met Leu Ser Leu Ile Asp Gly Lys
 20 25 30

Gly Pro Ile Arg Phe Val Leu Ala Leu Leu Ala Phe Phe Arg Phe Thr
 35 40 45

Ala Ile Ala Pro Thr Arg Ala Val Leu Asp Arg Trp Arg Gly Val Asn
 50 55 60

Lys Gln Thr Ala Met Lys His Leu Leu Ser Phe Lys Lys Glu Leu Gly
 65 70 75 80

Thr Leu Thr Ser Ala Ile Asn Arg Arg
 85

<210> 14
 <211> 90
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 14

atggactgga cctggatcct gttcctggtg gccgccgcca cccgcgtgca cagctctaag 60

aaaccaggag gccccggcaa gagccgcgcc 90

<210> 15
 <211> 90
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 15

atggattgga cttggatcct attttttagtt gctgctgcta ctagagttca ttcttctaaa 60

aaaccaggtg gccccggcaa gagccgcgcc 90

<210> 16
 <211> 88
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 16
 ggctcagcat ggcgcgcttc aggccaatca ggctcagcac gcggggcatg ccgcgcttca 60
 gcatgttcac ggcgcggctc ttgccggg 88

<210> 17
 <211> 90
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 17
 ggcctgaagc gcgccatgct gagcctgacg gacggcaagg gccccatacg cttcgtgctg 60
 gccctgctgg ctttcttccg cttcaccgcc 90

<210> 18
 <211> 89
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 18
 ggtgcttcat ggcggtctgc ttgttcacgc cgcgccagcg gtccagcacg gcgcgggtgg 60
 gggcaatggc ggtgaagcgg aagaaggcc 89

<210> 19
 <211> 89
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 19
 ccgccatgaa gcacctgctg agcttcaaga aggagctggg caccctgacc agcgccatca 60
 accgccgcag cagcaagcag aagaagcgc 89

<210> 20
 <211> 81
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 20
 cgcgcccacg ctggcgatca ggccaatcat cacggcaatg ccggtcttgc cgccgcgctt 60
 cttctgcttg ctgctgcggc g 81

<210> 21
 <211> 39
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 21
 cccaagcttg ccgccaccat ggactggacc tggatcctg 39

 <210> 22
 <211> 33
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 22
 cccaagcttg ccgccaccat ggattggact tgg 33

 <210> 23
 <211> 37
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 23
 atagtttagc ggccgcgccc acgctggcga tcaggcc 37

 <210> 24
 <211> 8
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 24
 Lys Gly Pro Ile Arg Phe Val Leu
 1 5

 <210> 25
 <211> 8
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 25
 Gly Gly Pro Gly Lys Ser Arg Ala
 1 5

 <210> 26
 <211> 8
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 26

Ile Ala Pro Thr Arg Ala Val Leu
1 5

<210> 27
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 27

Thr Trp Thr Gly Val Glu Ala Leu Ile Arg Ile Leu Gln Gln Leu Leu
1 5 10 15

Phe Ile His Phe Arg Ile Gly Cys Arg His Ser Arg Ile Gly Ile Ile
20 25 30

Gln Gln Arg Arg Thr Arg Asn Gly
35 40

<210> 28
<211> 43
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 28

Arg Trp Arg Gly Val Asn Lys Gln Thr Ala Met Lys His Leu Leu Ser
1 5 10 15

Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala Ile Asn Arg Arg Ser
20 25 30

Ser Lys Gln Lys Lys Arg Gly Gly Lys Thr Gly
35 40

<210> 29
<211> 106
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 29

Ala Val Lys Thr Val Ala Ser Ala Leu Gln Phe Gly Val Asp Ala Leu
1 5 10 15

Glu Arg Gly Leu Ile Asn Thr Val Leu Ser Val Lys Leu Arg His Ala
20 25 30

Pro Pro Met Phe Ile Leu Gln Thr Leu Ala Asp Pro Thr Phe Thr Glu
35 40 45

Arg Gly Phe Ser Lys Thr Val Lys Ser Asp Leu Ile Ala Met Phe Lys
50 55 60

Arg His Leu Leu Glu His Ser Phe Phe Leu Asp Arg Ala Glu Asn Met
 65 70 75 80

Gly Ser Gly Phe Ser Gln Tyr Ser Arg Leu Ser Glu Met Val Ala Ala
 85 90 95

Val Ser Gly Glu Ser Val Leu Lys Gly Val
 100 105

<210> 30
 <211> 110
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 30

Pro Gly Lys Ser Arg Ala Val Asn Met Leu Lys Arg Gly Met Pro Arg
 1 5 10 15

Val Leu Ser Leu Ile Gly Leu Lys Arg Ala Met Leu Ser Leu Ile Asp
 20 25 30

Gly Lys Gly Pro Ile Arg Phe Val Leu Ala Leu Leu Ala Phe Phe Arg
 35 40 45

Phe Thr Ala Ile Ala Pro Thr Arg Ala Val Leu Asp Arg Trp Arg Gly
 50 55 60

Val Asn Lys Gln Thr Ala Met Lys His Leu Leu Ser Phe Lys Lys Glu
 65 70 75 80

Leu Gly Thr Leu Thr Ser Ala Ile Asn Arg Arg Ser Ser Lys Gln Lys
 85 90 95

Lys Arg Gly Gly Lys Thr Gly Ile Ala Val Met Ile Gly Leu
 100 105 110

<210> 31
 <211> 106
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 31

His Met Met Val Ile Phe Arg Leu Met Arg Thr Asn Phe Leu Ile Lys
 1 5 10 15

Phe Leu Leu Ile His Gln Gly Met His Met Val Ala Gly His Asp Ala
 20 25 30

Asn Asp Ala Val Ile Ser Asn Val Ala Gln Ala Arg Phe Ser Gly Leu
 35 40 45

Leu Ile Val Lys Thr Val Leu Asp His Ile Leu Gln Lys Thr Glu Arg
50 55 60

Gly Val Arg Leu His Pro Leu Ala Arg Thr Ala Lys Val Lys Asn Glu
65 70 75 80

Val Asn Ser Phe Lys Ala Ala Leu Ser Ser Leu Ala Lys His Gly Glu
85 90 95

Tyr Ala Pro Phe Ala Arg Leu Leu Asn Leu
100 105

<210> 32
<211> 108
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 32

Lys Ser Arg Ala Val Asn Met Leu Lys Arg Gly Met Pro Arg Val Leu
1 5 10 15

Ser Leu Ile Gly Leu Lys Arg Ala Met Leu Ser Leu Ile Asp Gly Lys
20 25 30

Gly Pro Ile Arg Phe Val Leu Ala Leu Leu Ala Phe Phe Arg Phe Thr
35 40 45

Ala Ile Ala Pro Thr Arg Ala Val Leu Asp Arg Trp Arg Gly Val Asn
50 55 60

Lys Gln Thr Ala Met Lys His Leu Leu Ser Phe Lys Lys Glu Leu Gly
65 70 75 80

Thr Leu Thr Ser Ala Ile Asn Arg Arg Ser Ser Lys Gln Lys Lys Arg
85 90 95

Gly Gly Lys Thr Gly Ile Ala Val Met Ile Gly Leu
100 105

<210> 33
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 33

Lys Pro Asp Gly Ser Glu Cys Leu Pro Ala Ala Pro Asp Gly Ile Arg
1 5 10 15

Gly Phe Pro Arg
20

<210> 34
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 34

Lys Pro Gly Gly Pro Gly Lys Ser Arg Ala Val Asn Met Leu Lys Arg
1 5 10 15

Gly Met Pro Arg
20

<210> 35
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 35

Leu Gln Leu Phe Leu Arg Ala Thr Thr Glu Leu Arg Thr Phe Ser Ile
1 5 10 15

Leu Asn Arg Lys Ala Ile Asp
20

<210> 36
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 36

Leu Leu Ala Phe Phe Arg Phe Thr Ala Ile Ala Pro Thr Arg Ala Val
1 5 10 15

Leu Asp Arg Trp Arg Gly Val Asn
20

<210> 37
<211> 47
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 37

Arg Ser Ala Arg His Pro Trp Arg Ile Arg Phe Gly Ala Pro Gln Ala
1 5 10 15

Phe Leu Ala Gly Leu Leu Leu Ala Thr Val Ala Val Gly Thr Ala Arg
20 25 30

Ala Gly Leu Gln Pro Arg Ala Asp Met Ala Ala Pro Pro Thr Leu

35	40	45
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<210> 38
 <211> 52
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 38

Arg	Ala	Val	Leu	Asp	Arg	Trp	Arg	Gly	Val	Asn	Lys	Gln	Thr	Ala	Met
1			5					10						15	

Lys His Leu Leu Ser Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala
 20 25 30

Ile Asn Arg Arg Ser Ser Lys Gln Lys Lys Arg Gly Gly Lys Thr Gly
 35 40 45

Ile Ala Val Met
 50

<210> 39
 <211> 45
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 39

Leu	His	His	Cys	Ile	Ala	Arg	Trp	Ile	Ala	Gln	Arg	Gly	Gly	Trp	Val
1			5					10						15	

Ala Ala Leu Asn Leu Gly Asn Gly Pro Ile Leu Asn Val Leu Val Val
 20 25 30

Leu Gly Val Val Leu Leu Gly Gln Phe Val Val Arg Arg
 35 40 45

<210> 40
 <211> 47
 <212> PRT
 <213> Artificial Sequence

 <220>
 <223> Novel Sequence

 <400> 40

Leu	Lys	Arg	Gly	Met	Pro	Arg	Val	Leu	Ser	Leu	Ile	Gly	Leu	Lys	Arg
1			5					10						15	

Ala Met Leu Ser Leu Ile Asp Gly Lys Gly Pro Ile Arg Phe Val Leu
 20 25 30

Ala Leu Leu Ala Phe Phe Arg Phe Thr Ala Ile Ala Pro Thr Arg
 35 40 45

<210> 41
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 41

Thr Gly Ala Leu Leu Leu Gln Gly Met Ile Ala Ala Val Asp Thr
1 5 10 15

<210> 42
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 42

Thr Gly Ile Ala Val Met Ile Gly Leu Ile Ala Ser Val Gly Ala
1 5 10 15

<210> 43
<211> 44
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 43

Gln Thr Glu Asp Ile Arg Asp Val Leu Arg Phe Met Asp Gly Phe Thr
1 5 10 15

Thr Leu Lys Glu Asn Ile Met Arg Phe Trp Arg Ser Pro Asn Pro Gly
20 25 30

Ser Trp Val Ser Cys Gln Val Leu Leu Ala Leu Leu
35 40

<210> 44
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 44

Lys Gln Thr Ala Met Lys His Leu Leu Ser Phe Lys Lys Glu Leu Gly
1 5 10 15

Thr Leu Thr Ser Ala Ile Asn Arg Arg Ser Ser Lys Gln Lys Lys Arg
20 25 30

Gly Gly Lys Thr Gly Ile Ala Val Met Ile Gly Leu Ile
35 40 45

<210> 45

<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 45

Phe Arg Arg Glu Leu Asp Ala Leu Gly His Glu Leu
1 5 10

<210> 46
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 46

Phe Lys Lys Glu Leu Gly Thr Leu Thr Ser Ala Ile
1 5 10

<210> 47
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 47

Asp Ser Phe Lys Lys Gly Leu Pro Arg
1 5

<210> 48
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 48

Asn Met Leu Lys Arg Gly Met Pro Arg
1 5

<210> 49
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 49

Phe Arg Gln Leu Asp Asn Ser Arg Thr Arg Gln Phe Thr Pro His His
1 5 10 15

Leu Asn Cys Val Ile Ser Ser Val Tyr Glu Gly Thr Arg Asp Gly Val
20 25 30

Gly Ala

<210> 50
<211> 37
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 50

Leu Glu Glu Leu Lys Asn Glu Ala Val Arg His Phe Pro Arg Ile Trp
1 5 10 15

Leu His Ser Leu Gly Gln His Ile Tyr Glu Thr Tyr Gly Asp Thr Trp
20 25 30

Thr Gly Val Glu Ala
35

<210> 51
<211> 44
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 51

Thr Trp Thr Gly Val Glu Ala Leu Ile Arg Ile Leu Gln Gln Leu Leu
1 5 10 15

Phe Ile His Phe Arg Ile Gly Cys Arg His Ser Arg Ile Gly Ile Ile
20 25 30

Gln Gln Arg Arg Thr Arg Asn Gly Ala Ser Lys Ser
35 40

<210> 52
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 52

Asp Phe His Arg Phe Ser Tyr Ile Arg Asp Arg Arg Ala
1 5 10

<210> 53
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 53

Arg His Ser Arg Ile Gly Ile Ile Gln Gln Arg Arg Thr

1 5 10

<210> 54
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 54

Glu Phe Gly Asn Thr Phe Ser Val Pro Asp Pro Leu Arg Glu Val Gln
1 5 10 15

Arg Leu

<210> 55
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 55

Thr Tyr Gly Asp Thr Trp Thr Gly Val Glu Ala Leu Ile Arg Ile Leu
1 5 10 15

Gln Gln Leu

<210> 56
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 56

Trp Leu Trp Ser Glu Gly Gln Gly Ala Val Phe Tyr
1 5 10

<210> 57
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Novel Sequence

<400> 57

Arg Ile Trp Leu His Ser Leu Gly Gln His Ile Tyr
1 5 10

<210> 58
<211> 12
<212> PRT
<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 58

Leu Ser Lys Tyr Leu Ser Asp Leu Leu Phe Val Phe
1 5 10

<210> 59

<211> 13

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 59

Leu Ile Arg Ile Leu Gln Gln Leu Leu Phe Ile His Phe
1 5 10

<210> 60

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 60

Ile Gly Ala Val Leu Pro Lys Gly Ser Phe Lys Ser Thr Ile Met Arg
1 5 10 15

Val Leu Asp Glu Met Glu Val Leu Gly Val Arg Ile Met Pro Arg
20 25 30

<210> 61

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 61

Glu Asp Gln Gly Pro Gln Arg Glu Pro Tyr Asn Asp Trp Thr Leu Glu
1 5 10 15

Leu Leu Glu Glu Leu Lys Asn Glu Ala Val Arg His Phe Pro Arg
20 25 30

<210> 62

<211> 64

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 62

Pro Gln Ala Ser Ile Arg Gln Ser Gln Glu Glu Pro Glu Asp Leu Arg
1 5 10 15

Pro Glu Ile Arg Ile Gln Glu Leu Arg Arg Ile Gly Asp Glu Phe Asn

20

25

30

Glu Thr Tyr Thr Arg Arg Val Phe Ala Asp Tyr Arg Glu Ala Glu Asp
 35 40 45

His Pro Gln Met Val Ile Leu Gln Leu Leu Arg Phe Ile Phe Arg Leu
 50 55 60

<210> 63
 <211> 68
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 63

Asp Gln Gly Pro Gln Arg Glu Pro Tyr Asn Asp Trp Thr Leu Glu Leu
 1 5 10 15

Leu Glu Glu Leu Lys Asn Glu Ala Val Arg His Phe Pro Arg Ile Trp
 20 25 30

Leu His Ser Leu Gly Gln His Ile Tyr Glu Thr Tyr Gly Asp Thr Trp
 35 40 45

Thr Gly Val Glu Ala Leu Ile Arg Ile Leu Gln Gln Leu Leu Phe Ile
 50 55 60

His Phe Arg Ile
 65

<210> 64
 <211> 50
 <212> PRT
 <213> Artificial Sequence

<220>
 <223> Novel Sequence

<400> 64

Leu Arg Pro Glu Ile Arg Ile Gln Glu Leu Arg Arg Ile Gly Asp Glu
 1 5 10 15

Phe Asn Glu Thr Tyr Thr Arg Arg Ala Phe Ala Asp Tyr Arg Glu Ala
 20 25 30

Glu Asp His Pro Gln Met Val Ile Leu Gln Leu Leu Arg Phe Ile Phe
 35 40 45

Arg Leu
 50

<210> 65
 <211> 53
 <212> PRT
 <213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 65

Leu Leu Glu Glu Leu Lys Asn Glu Ala Val Arg His Phe Pro Arg Ile
1 5 10 15

Trp Leu His Ser Leu Gly Gln His Ile Tyr Glu Thr Tyr Gly Asp Thr
20 25 30

Trp Thr Gly Val Glu Ala Leu Ile Arg Ile Leu Gln Gln Leu Leu Phe
35 40 45

Ile His Phe Arg Ile
50

<210> 66

<211> 48

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 66

Arg Asn Val Ala Arg Gln Leu His Ile Pro Leu Gln Ser Glu Pro Val
1 5 10 15

Val Thr Asp Ala Phe Leu Ala Val Ala Gly His Ile Phe Ser Ala Gly
20 25 30

Ile Thr Trp Gly Lys Val Val Ser Leu Tyr Ser Val Ala Ala Gly Leu
35 40 45

<210> 67

<211> 52

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 67

Asn Asp Trp Thr Leu Glu Leu Leu Glu Glu Leu Lys Asn Glu Ala Val
1 5 10 15

Arg His Phe Pro Arg Ile Trp Leu His Ser Leu Gly Gln His Ile Tyr
20 25 30

Glu Thr Tyr Gly Asp Thr Trp Thr Gly Val Glu Ala Leu Ile Arg Ile
35 40 45

Leu Gln Gln Leu
50

<210> 68

<211> 53

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 68

Trp Thr Leu Asp Phe Leu Arg Glu Arg Leu Leu Gly Trp Ile Gln Asp
1 5 10 15

Gln Gly Gly Trp Asp Gly Leu Leu Ser Tyr Phe Gly Thr Pro Thr Trp
20 25 30

Gln Thr Val Thr Ile Phe Val Ala Gly Leu Thr Ala Ser Leu Thr Ile
35 40 45

Trp Lys Lys Met Gly
50

<210> 69

<211> 58

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 69

Trp Thr Leu Glu Leu Leu Glu Glu Leu Lys Asn Glu Ala Val Arg His
1 5 10 15

Phe Pro Arg Ile Trp Leu His Ser Leu Gly Gln His Ile Tyr Glu Thr
20 25 30

Tyr Gly Asp Thr Trp Thr Gly Val Glu Ala Leu Ile Arg Ile Leu Gln
35 40 45

Gln Leu Leu Phe Ile His Phe Arg Ile Gly
50 55

<210> 70

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Novel Sequence

<400> 70

Trp Thr Leu Asp Phe Leu Arg Glu Arg Leu Leu Gly Trp Ile Gln Asp
1 5 10 15

Gln Gly Gly Trp Val Arg Leu Leu
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